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CIVIL RESERVE AIR FLEET: A ROUGH ROAD AHEAD

By

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A paper submitted to the faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

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18 May 2004

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## Abstract

The Civil Reserve Air Fleet (CRAF) was created in 1951 to provide supplemental airlift capability to the U.S. military for worldwide operations. The program has been mutually beneficial, providing peacetime government cargo and passenger business for CRAF participants while allowing the military to man and maintain a smaller, less expensive organic airlift capability. Indeed, Operations Enduring Freedom and Iraqi Freedom recently illustrated the undeniable requirement for the CRAF to continue supplementing organic lift. However, air carrier industry trends and a perceived erosion of the incentive program have put future air carrier participation at risk. If CRAF is to survive, USTRANSCOM and the Air Force's Air Mobility Command must make some tough decisions and implement sweeping changes in the way it manages the program. This paper illustrates concerns with the CRAF program, its outdated activation system, and deteriorating incentives and recommends changes that will ensure the CRAF exists to support the Global War on Terror and other operations well into the future

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## INTRODUCTION

Transformation has been a word commonly bandied about the Department of Defense under the leadership of Secretary Donald Rumsfeld (SECDEF). Indeed, he has called for a military that is faster, more agile, and more lethal, shedding its Cold War legacies. Further, transformation includes a "focused logistics" concept that in some ways mirrors the civilian "just in time" supply system.<sup>1</sup> The Quadrennial Defense Review published under the current administration changes the focus of military planning efforts from fighting two simultaneous major theater wars to one devoted to the defense of the United States through Homeland Security, deterring aggression and coercion in four critical regions, and swiftly defeating aggression in two overlapping major conflicts while being capable of a decisive victory in one of those conflicts; the so-called 1-4-2-1 construct.<sup>2</sup> When taken in total and coupled with a decade's worth of withdrawal of U.S. forces previously garrisoned on foreign soil, these transformational concepts will severely tax the United States' strategic lift capability, especially the strategic airlift system.

The strategic airlift system is comprised of two critical components, the military's organic airlift and the Civil Reserve Air Fleet (CRAF). The military's organic airlift consists of assets belonging to the Air Force's Air Mobility Command (AMC), including the C-141 Starlifter<sup>3</sup>, C-5 Galaxy, and C-17 Globemaster II.<sup>4</sup> Expressing concerns over lift requirements during Operation Iraqi Freedom (OIF) in 2003, General John W. Handy, Commander, U.S. Transportation Command (USTRANSCOM) stated that current and

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<sup>1</sup> Joint Chiefs of Staff, Joint Vision 2020, (Washington DC: June 2000), 24.

<sup>2</sup> Department of Defense, Quadrennial Defense Review Report (Washington DC: 30 September 2001), 17.

<sup>3</sup> The C-141 will leave service in FY2006.

<sup>4</sup> The C-17 is still in production with a programmed acquisition of 180 aircraft to be completed by FY2008.

expected assets are insufficient and the C-17 buy should be expanded from 180 to 222. Further, he stated that the total lift capability of 54.5 million ton-miles per day called for by the Mobility Requirements Study 2005 (MRS-05) was made obsolete with the start of the Global War on Terror and a follow-on study is needed to determine the actual requirement, which he expects to be significantly higher.<sup>5</sup> To supplement the current and expected lift shortfalls, USTRANSCOM depends on the second component of the strategic airlift system, which consists of air carriers voluntarily committing cargo and passenger aircraft to the CRAF based solely on incentives. The CRAF program, its incentive system, and activation by three progressively demanding stages, have become seriously outdated. USTRANSCOM must take quick action to correct these shortfalls or the air carriers will withdraw support from the CRAF and the combatant commanders will no longer have the rapid, flexible lift crucial for worldwide power projection.

### BACKGROUND

The CRAF was created in December 1951 by a memorandum of agreement between the Departments of Defense and Commerce due to shortfalls in the military's organic airlift capability and the United States' expanding world role in the cold war.<sup>6</sup> Commander, USTRANSCOM with SECDEF approval can activate the CRAF in three progressive stages. Stage I, "Committed Expansion," provides 47 passenger and 31 cargo wide-body equivalent (WBE) aircraft within 24 hours of activation. Stage II, "Defense Airlift Emergency," provides an additional 57 passenger and 45 cargo WBE aircraft along with 25 aeromedical-

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<sup>5</sup> Sandra I. Erwin, "War Buildup Stresses Transportation System," National Defense Magazine, (April 2003), 1.

<sup>6</sup> Theodore Crackel, A History of the Civil Reserve Air Fleet, (Washington DC: Air Force History & Museums Program 1998), 85.

equipped aircraft within 24 hours of activation.<sup>7</sup> Stage III, "National Emergency," provides an additional 49 passenger and 45 cargo WBE aircraft and 21 extra aeromedical-equipped aircraft within 48 hours of activation when the President or Congress has declared a national emergency.<sup>8</sup> In addition to the three Stages, the CRAF is organized into segments by aircraft capability including domestic, long-range international, short-range international, aeromedical, and Alaskan.<sup>9</sup>

Since its inception, CRAF has only been formally activated twice but commercial aircraft have supported military lift requirements during nearly all operations since World War II including the Korean and Vietnam conflicts. The first activation occurred during Operations Desert Shield/Desert Storm and included both Stage I and, later, Stage II. During those operations, 110 aircraft flew over 4,700 missions hauling 300,000 passengers and 150,000 tons of cargo.<sup>10</sup> The incredible CRAF lift effort accounted for 27% of airlift cargo, and total passenger throughput for deployment and redeployment of 62% and 84%, respectively.<sup>11</sup> The second CRAF activation occurred from February to June 2003, when the Commander, USTRANSCOM, activated CRAF Stage I for OIF. Only the 47 aircraft of the passenger transportation portion of Stage I were activated. During the 130 days of Stage I activation, aircraft from 11 companies deployed 254,000 troops on 1,625 missions at a cost

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<sup>7</sup> A wide body equivalent (WBE) is equal to the passenger or cargo hauling capacity of a Boeing 747-100.

<sup>8</sup> Institute for Defense Analyses, Sustaining the Civil Reserve Air Fleet (CRAF) Program, (Alexandria, VA: 1 May 2003), 3.

<sup>9</sup> Joint Chiefs of Staff, Joint Doctrine Encyclopedia, (Washington, DC: 16 July 1997), 110.

<sup>10</sup> Lester Reingold, "CRAF a 'Qualified' Success," Air Transport World, Vol 28, Iss 8 (Aug 1991): 24.

<sup>11</sup> William G. Palmby, Enhancement of the Civil Reserve Air Fleet: An Alternative for Bridging the Airlift Gap, (U.S. Air University Press: School of Advanced Airpower Studies, 1996), 4.



of \$632 million.<sup>12</sup> Although not part of the formal activation, 14 cargo carriers flew voluntary cargo missions totaling \$574 million.<sup>13</sup> The decision to treat passenger and cargo aircraft differently could impact future CRAF commitments, as some cargo carriers were resentful of the dissimilar pricing incentives that resulted.

### CURRENT INCENTIVE PROGRAM

The CRAF program is a quid-pro-quo system whereby both the commercial air carriers and the government benefit. When a CRAF stage is activated, the air carriers that have volunteered to participate under that stage maintain and operate the identified aircraft for the exclusive use of AMC. The aircraft must be "U.S.-registered [and] capable of overwater operations, at least 3,500 nautical mile range and 10 hours per day utilization rate."<sup>14</sup> The air carriers also provide four crews per aircraft along with fuel, maintenance, and other support. The crews assigned must be U.S. citizens and not members of the military Reserves or National Guard to prevent a conflict should they be "called up" to active duty coincidental with CRAF activation. In return, the air carriers are able to compete for \$2 billion per year in government air transportation contracts. Approximately 40% of this is available based on a mobilization value point system roughly proportional to the share of assets committed to the CRAF and the usability of those assets. For example, commitment of a Boeing 747-400 earns higher MV points than commitment of a smaller Boeing 767. The remaining 60% of contracts up for bid fall under the General Services Administration (GSA)

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<sup>12</sup> Gen John Handy, Commander, USTRANSCOM, "Statement," U.S. Congress, Senate, Armed Services Seapower Subcommittee, State of the Command, 108<sup>th</sup> Cong, 2d sess., 10 March 2004, 1.

<sup>13</sup> Stanley J. Sliwinski, "Sustaining the Civil Reserve Air Fleet for the Future," (Unpublished Research Paper, U.S. Naval War College, Newport, RI: 2004), 4.

<sup>14</sup> "U.S. Air Force Fact Sheet: Civil Reserve Air Fleet." Air Force Library Fact Sheets. April 2003. <<http://www.af.mil/factsheets/factsheet.asp?fsID=173>> [23 March 2004].

City Pairs passenger travel program. The only prerequisite for air carriers bidding for City Pairs contracts is a commitment of at least 30% of its long-haul fleet.<sup>15</sup>

From the government's perspective, utilizing civilian air carriers for passenger and cargo service supplements the military's organic lift during contingency operations by up to 50% and significantly reduces the number of aircraft the military must purchase, man, and maintain. The estimated cost to the military to purchase a capability equal to that provided by the CRAF is \$50 billion in initial procurement and another \$1 to \$3 billion annually to maintain and operate.<sup>16</sup> Instead, utilizing commercial air carriers allows the government to pay for what it needs, when it is needed. Historically, commercial aircraft have moved as much as 93% of troops and 41% of long-range cargo.<sup>17</sup>

### INCENTIVE PROGRAM PROBLEMS

Under the current incentive program, air carriers are not necessarily rewarded for their participation. There are seven contract categories for peacetime government airlift. Four of those categories account for approximately \$755 million historically and require the air carrier to pledge a minimum of 30% of their total long-haul fleet to the CRAF with no attempt to base the contracts on the air carrier's actual commitment. Therefore, an air carrier pledging 30 aircraft from its fleet of 100 has the same bidding rights in the program as an air carrier pledging just 3 aircraft from its total fleet of 10 despite the fact that the 30 aircraft are far more useful to USTRANSCOM planners.

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<sup>15</sup> Institute for Defense Analyses, S-2.

<sup>16</sup> Colonel David Jensen, spokesperson for Air Mobility Command, interviewed by Jackie Northam for All Things Considered (Washington, DC): 10 February 2003, transcript, 1.

<sup>17</sup> "Civil Reserve Air Fleet Stage I Activation Announced." Defense Link News Release. February 8, 2003. <[http://www.defenselink.mil/news/Feb2003/b02082003\\_bt064-03.html](http://www.defenselink.mil/news/Feb2003/b02082003_bt064-03.html)> [23 March 2004].

The remaining 40% of the air transportation contracts average \$535 million annually and consist of Defense Department charter passenger and cargo business allocated in direct proportion to air carrier total mobilization value (MV) points.<sup>18</sup> MV points are awarded based upon the number and kind of aircraft pledged to the CRAF where points are doubled for those aircraft pledged to Stage I since it is the most likely to be activated. In an attempt to inflate their MV points, the larger air carriers have pledged the minimum required for Stages I and II and then over-committed to Stage III by three and a half times the USTRANSCOM requirement.<sup>19</sup> Given that the likelihood of Stage III activation is exceedingly low, the large number of MV points accrued for Stage III over-commitment skew contracts in favor of the larger air carriers despite what is, in reality, a very minor commitment.

Further compounding the MV point system problem, large air carriers do not consider the charter missions very lucrative since they are often ad hoc, disrupting their far more profitable scheduled service and account for an extremely small portion of their total annual operating revenue. To put this in perspective, the top six U.S. commercial air carriers have combined annual sales of approximately \$75 billion resulting in CRAF-related long-range passenger charters equaling only four-tenths of one percent of their annual sales. In contrast, AMC's peacetime passenger charters mean long-term survival for the much smaller, so-called "second-tier" U.S. international air carriers.<sup>20</sup> The air carriers responded to this system by forming "CRAF carrier teams" and pooling their respective MV points. The large air carriers receive a commission from the second-tier air carriers who fly all of the charters their

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<sup>18</sup> Institute for Defense Analyses, 31.

<sup>19</sup> Ibid., A-45.

<sup>20</sup> Ibid., A-29.

team has secured from pooled MV points. Since team commissions are not included in the way AMC calculates contract pay rates, the air carriers' profit margin is significantly reduced due to the team commissions. The second-tier air carriers continue to fly the contracts because they provide operating revenue though not much profit. Meanwhile, the large air carriers commit aircraft they never expect to have activated and collect their commission.

Though this system is currently filling USTRANSCOM CRAF requirements, it is headed for trouble within 5 years due to the C-17 acquisition program. A total of 180 C-17s are expected to enter service by FY2008 with the buy reaching 125 in FY2005/06. Traditionally, AMC attempts to pay for 60% of its annual flying hour program by cargo hauling missions with the other 40% coming from training allocations. When the C-17 fleet reaches 125, AMC will have the ability, and need, to haul 100% of the peacetime cargo to continue paying 60% of the flying hour program with cargo missions and provide required proficiency sorties for their pilots.<sup>21</sup> This will remove all peacetime contract business for the second-tier air carriers and, without their commissions to their respective teams, the larger air carriers will no longer have incentive to pledge aircraft to the cargo portion of the CRAF.<sup>22</sup> Despite the peacetime capability of a fleet of 180 C-17s, the military will still require CRAF assistance during a worldwide contingency operation.

### **AIR CARRIER INDUSTRY CONSTRAINTS**

The very nature of the current air carrier industry presents USTRANSCOM with CRAF program management issues. The air carriers are, after all, a for-profit industry with colossal capital investments in equipment and infrastructure. In the two years following the

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<sup>21</sup> Ibid., 24.

<sup>22</sup> The numbers presented are based on pre-Global War on Terror numbers. If FY02/03 totals continue, there will remain business, albeit significantly reduced, for second-tier air carriers even after 180 C-17s enter service.

9/11 terrorist attacks, the U.S. air carrier industry recorded losses of \$20.7 billion. These losses forced two of the major air carriers into Chapter 11 bankruptcy protection and drove the air carrier industry-wide debt up \$25 billion in the period 1999 - 2002 to an aggregate total of \$75 billion. As a consequence, only one major passenger air carrier has an A-level credit rating as of March 2002.<sup>23</sup> The financial status of the air carriers concerns the CRAF program because, as the CEO of Continental Airlines stated, "Bankrupt companies kind of threaten the ability for the government to have access to that Civil Reserve Air Fleet."<sup>24</sup> Air carriers in this economically troubled industry might be much more reluctant to offer up their aircraft during cyclic peak tourist periods when their revenues are at their historical highest.

The CRAF program is built around wide-body equivalent (WBE) aircraft equal in capacity to the Boeing 747-100. The WBE model leads military planners to prefer 747s since their cargo holds accommodate standard military cargo pallets without modification and can carry 90 tons, a larger load than other commercial cargo aircraft. A recent U.S. General Accounting Office (GAO) study found that in the first 10 months of FY2002 alone, 94% of military cargo missions flown by commercial aircraft were on 747s. However, 40% of those missions did not fully utilize the space or weight limits of the 747, averaging less than 57 tons. Those cargo loads could have easily been flown on any of the smaller wide-body aircraft with some pallet modification. Indeed, CRAF participants owning 62% of the wide-body cargo aircraft do not get peacetime business because they lack 747 aircraft.<sup>25</sup> Looked at from a different perspective, one air carrier with 100 aircraft smaller than the 747

<sup>23</sup> Institute for Defense Analyses, 7 and B-10 through B-14.

<sup>24</sup> Al Frank, "War with Iraq Would Hit Airlines hard," Star-Ledger of Newark, 15 October 2002, Financial section.

<sup>25</sup> General Accounting Office, MILITARY READINESS: Civil Reserve Air Fleet Can Respond as Planned, but Incentives May Need Revamping. Report to the Chairman. Subcommittee on Military Readiness, Committee on Armed Services, U.S. House of Representatives. (Washington, DC: December 2002), 2.

received less than 4% of AMC's FY2002 peacetime cargo business while another air carrier with only 10 747s received 37% of the business.<sup>26</sup> This tendency to restrict cargo to 747s becomes a disincentive to many CRAF participants.

Trends in the air carrier fleets may put further pressure on AMC to modify their practice of leaning so exclusively on the 747 for their cargo missions. Air carriers have been systematically eliminating their 747s and wide-body 3-engine aircraft. In the 1-year period after the 9/11 attacks, air carrier wide-body operations dropped 15%.<sup>27</sup> In 2003 alone, the air carriers announced the retirement of 43 more of these large aircraft, replacing them with smaller, more cost-efficient aircraft.

### INTEROPERABILITY ISSUES

The CRAF program has been functioning for over 50 years. Despite this, there still exist significant interoperability issues between the commercial air carriers and military operations.

#### Configuration

Commercial aircraft are built to reduce costs and maximize profits while military aircraft are designed with ruggedness and utility in mind. These design criteria typically result in civil aircraft with a slender fuselage and low wing. Indeed, civil passenger aircraft often lack integrated stair systems to minimize weight, leading to external support such as gangways or external, mobile stairways. Likewise, civil cargo aircraft often have smaller doors and lightweight floors to save weight and improve fuel efficiency. This leads to the requirement for cargo pallets smaller than standard military use and heavy-lift external

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<sup>26</sup> James R. Asker, "CRAF-ting Incentives," *Aviation Week & Space Technology*, Vol. 158, Iss. 1 (6 January 2003): 19.

<sup>27</sup> Institute for Defense Analyses, B-20.

support devices that can raise the cargo as much as 14 feet in the air.<sup>28</sup> The smaller doors and narrower fuselages can accommodate bulk cargo but not oversize and outsize cargos typical of military requirements. Civil aircraft are not usually built for the tight ground maneuvering often required at austere, military forward operating bases either. In contrast, military aircraft are typically designed with a high wing and T-tail with ramps at or near ground level to facilitate drive on/drive off loading and unloading. The flooring also tends to be much heavier and the fuselage wider to accommodate large, heavy pallets.

### Equipment

As one might expect, commercial aircraft are not equipped the same as military aircraft. At a minimum, navigation and communication equipment are typically incompatible. Changes in the U.S. and international airspace routing system allow aircraft equipped with Global Positioning System (GPS) navigation to get from point A to point B anywhere in the world. Once at the destination, however, GPS does not guarantee the ability to penetrate weather and land safely unless aircraft approach procedures have been worked out and published in advance; a very time consuming procedure and not currently available everywhere, especially at the military's more remote forward operating locations. As to communications, most military aircraft utilize frequency-hopping radios and secure radios in the UHF and HF bands while most civil aircraft operate on the VHF band. These issues can be overcome with money but air carriers may be reluctant to allow modifications to their aircraft that could affect their airworthiness certificates.

### Threat Environment

A comparison of organic military airlift to the CRAF readily reveals a CRAF deficit. Military lift can and will operate in forward areas considered hostile. The focused logistics

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<sup>28</sup> Palmby, 9.

transformation objective that calls for delivering what the warfighter needs, when and where it is needed may prove difficult to implement with CRAF aircraft. Military aircraft are equipped with Identification Friend or Foe (IFF) equipment that operates in civil aviation identification and altitude reporting modes as well as classified combat modes. Commercial aircraft lack the combat modes, creating the possibility of fratricide if operating too near the combat area. Military aircraft are also equipped with (and crews trained to operate) threat warning systems and countermeasures. There is currently no parallel equipment or training in commercial aircraft. These restrictions to operations can force CRAF aircraft to land at rear area intermediate staging bases (ISB) where the cargo and passengers must be transloaded to military aircraft for deployment to the forward area. This slows delivery to the warfighters, tasks military strategic inter-theater airlift to be utilized as intra-theater airlift, which in turn increases CRAF aircraft requirements and, consequently, the cost of the operation. Also, no matter the wording of the contracts between USTRANSCOM and the operating CRAF air carrier, no one can force the civilian CRAF crew to fly "in harms way," further complicating the problem.

The world changed after the 9/11 terrorist attacks and that has complicated the use of the CRAF. Previously, the nature of conflicts often meant the threat was eliminated as one removed oneself geographically from the area of combat operations. In today's asymmetric world, there is a very real possibility that CRAF aircraft operating well outside of the principle combat area may still be exposed to serious threats. The most dangerous is the potential use of weapons of mass destruction (WMD). Commercial aircraft and crews are neither equipped nor trained to operate in areas exposed to WMD. Since, the crews are all volunteers, there is the very real possibility that the credible threat of WMD use could



seriously curtail the ability of CRAF to perform required airlift due to a lack of crews. Indeed, a study conducted after the 1991 Gulf War found that morale suffered and volunteer rates fell in some CRAF companies in the face of Scud missile attacks on Riyadh and Dhahran, Saudi Arabia.<sup>29</sup>

Though WMD is the most serious threat to CRAF aircraft, arguably the highest probability threat is a terrorist employing a man-portable aerial defense (MANPAD) surface-to-air missile (SAM). Within Iraq alone, the U.S. has accounted for only a small percentage of the pre-war estimated 3,700 to 10,000 shoulder-fired missiles which means these SAMs could be available for sale in the world's illegal weapons market.<sup>30</sup> Between 1990 and 2000, there were 26 SAM attacks on transport aircraft. The significant points surrounding these attacks are that most were successful, not all occurred in war zones, and some of the targeted aircraft were civilian charter aircraft as well as those carrying United Nation relief supplies.<sup>31</sup> Since commercial aircraft movements are typically published in advance and readily available over the internet and other unsecure communications means, it is well within the realm of possibility that a belligerent could target a CRAF participant immediately downrange of takeoff when it is still at low altitude, relatively slow, and very heavy and non-maneuverable. This is the very scenario of the attack on a DHL Airbus A300 freighter departing Baghdad International Airport on 22 November 2003. Though the aircraft was

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<sup>29</sup> Robert C. Owen, "The Airlift System," Air Power Journal, (Fall 1995): 7.

<sup>30</sup> Dick Durbin and Chuck Schumer, "Lawmakers Make Greater Push for Anti-Missile Countermeasures," Defense Daily, Vol. 220, Iss. 26, (6 November 2003): 1.

<sup>31</sup> "Raising the Stakes: Risk, Even in War, Reaches Levels Where Action Needs to be Taken to Counter It. Has that Point Been Reached for Transport Aircraft?" Flight International, (2 December 2003): 5.

able to recover and land, its loss could have severely curtailed future CRAF involvement by any or all air carriers and their crews.<sup>32</sup>

## RECOMMENDATIONS

There are numerous actions and changes that can be implemented in the near term to ensure the CRAF remains a viable program well into the future standing ready to support the combatant commander's airlift needs. However, before any changes are instituted, USTRANSCOM should conduct a follow-on study to the MRS-05 that was conducted in 1998 and published in 2001. The follow-on study must determine the actual and projected combatant commander airlift requirements under the current 1-4-2-1 construct and the Global War on Terror.

The current system of calling up the CRAF participants in three Stages is based on an outdated cold war construct. That process should be shelved and a completely new system enacted that accounts for changes in the air carrier industry and the current and projected national security environment. Instead of three Stages, the CRAF participants will volunteer aircraft to one of nine air carrier segments that include: domestic passenger, domestic cargo, transatlantic passenger, transatlantic cargo, transpacific passenger, transpacific cargo, aeromedical, Alaska, and Central and South America. The specific number of CRAF aircraft required in each segment will be established by USTRANSCOM once a MRS-05 follow-on study is completed. Only the number of aircraft required by USTRANSCOM will be assigned to any given segment to remove the problems associated with skewing mobilization value points found under the current system. When air carriers volunteer more aircraft than required, a lottery will assign the proper number of aircraft. Aircraft volunteered but not picked by the lottery will have the opportunity to volunteer for a different segment. Once an

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<sup>32</sup> Ibid., 5.

air carrier is associated with a line-position on the respective segment list, the air carrier will contract to remain there for 3 years vice the current contracts which are renegotiated annually.

The segment categories are crafted to allow air carriers to volunteer under specific segments where they already maintain industry expertise, established routes and hubs, and support infrastructure. This will alleviate some of the problems associated with the differences between military and commercial airlift aircraft and respective support equipment as discussed above. The commander, AMC will have authority to activate the first 20% of any single segment to facilitate rapid reaction operations and fill organic and contract shortfalls. The Commander, USTRANSCOM can activate any or all aircraft assigned to as many as two segments. The Secretary of Defense has final authorization to activate any number of segments with full activation requiring Congressional or Presidential concurrence.

The MV points will be weighted toward the segments with the highest requirements for supplemental airlift and toward the aircraft volunteered highest on each segment list. This provides more equitable compensation for those air carriers whose assets are at the greatest risk of CRAF activation. If certain segments do not attract enough volunteers or air carriers are hesitant to place their aircraft at the top of the list, the government could tailor calculated profit margins to be greatest for aircraft activated from higher on the list than those further down. Since these payments would only be made during activation of the segment, increased cost could be kept to a minimum and would avoid the appearance of subsidizing the commercial air carrier industry during peacetime.

All government peacetime air transportation contracts, including those outside DoD, such as the Federal Emergency Management Agency and Department of Transportation,

would be tied directly to the CRAF through MV points accrued. Under the current system, the lion's share of peacetime governmental contracts fall under the GSA City Pairs program, averaging nearly \$600 million annually, and require only that the air carrier bidding for the contract have committed at least 30% of its long-haul fleet to the CRAF. Under the new system, competition for the contracts will be based entirely on MV points accrued. The system will also smooth out the inequities that have frustrated several air carriers in recent years and eliminate the team pooling of MV points.

Military airlift planners must break out of the planning paradigm associated with Boeing 747 aircraft. To remain viable and cost effective, planners must utilize technology to build and track non-standard pallets that can be accommodated by different commercial airlift aircraft. Since the expertise for this already exists in the commercial sector, the military should develop a planning cell with air carrier personnel imbedded. These personnel could be civilian personnel from the respective air carriers identified and trained for interaction with military planners or active duty or reserve personnel with specific segment experience on rotational assignment with the air carriers involved in those segments. This will greatly facilitate planning and utilization of the CRAF participants, increase efficiency, and improve effectiveness.

Future CRAF operations may find aircraft in WMD or SAM threat environments. Policies and laws must be altered to allow military reservists to be assigned to CRAF crews. Prior planning would be required to ensure a large enough pool of Reservists to fulfill a simultaneous activation of the CRAF and a Reserve call up to active duty. Since not all Reservists working for air carriers are pilots and not all air carrier pilots are Reservists, this shift in policy could be implemented with only a modest increase in Reserve numbers.

Studies must also be conducted to determine the requirement for threat warning and avoidance systems, threat countermeasures equipment, and proper communications equipment to allow near-seamless operations within the expected operating areas. Placing military reservists on the crews would facilitate training and use of the equipment and alleviate some of the problems associated with classified equipment. This will place a minor strain on the Reserve system and require more detailed tracking of Reservists employed by the commercial air carriers but should prove a comparatively minor expense.

AMC will have to rethink their current policy of paying for their annual flying hour program by flying 60% of their sorties as revenue-generating cargo sorties. As was demonstrated, when the C-17 fleet reaches 125 in FY2005/06, the current AMC policy will remove the incentives for small and large air carriers alike and possibly drive them out of the CRAF program all together. AMC may have to accomplish a larger percentage of their required training in simulators. Simulator training is less desirable from a pilot perspective but advances in simulator technology could make this a viable alternative to losing support for CRAF. Like so many other program initiatives, this is an economic issue and will require detailed study to find the right mix between commercial air carrier peacetime airlift contracts and AMC's need to fly their aircraft and train their crews.

Finally, a board should be established with representatives from CRAF air carriers, USTRANSCOM and AMC staff planning officers, and appropriate officials from the Office of the Secretary of Defense and Secretary of Transportation. This board will provide a conduit for the dissemination of applicable information, facilitate segment assignments, and provide recommendations for problems that may arise.

## CONCLUSION

The cooperative relationship between the commercial air transportation industry and the military has proven successful dating all the way back to World War II. The formalization of the program under the Civil Reserve Air Fleet in 1951 merely increased its utility. However, as with any quid-pro-quo system, if the voluntary system is to survive, it must change whenever either side perceives a loss of incentive. Such is the case today and difficult decisions must be made within the next 5 years if the CRAF is to continue to provide the supplemental passenger and cargo capabilities that so successfully augment the military's organic airlift. During OIF last year, USTRANSCOM delivered in just 30 days what had taken 6 months during Operations Desert Shield and Desert Storm.<sup>33</sup> This monumental achievement could not have happened without CRAF involvement. Without the CRAF, OIF could not have obtained its high success as rapidly as it did and the warfighter and country as a whole would have paid the price.

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<sup>33</sup> Erwin, 1.

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